Holder for a compact disk

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Inventor: FARRAR PETER ANTONY (GB); FRASER ANTHONY HENRY JOSEPH (GB); PIJANOWSKI STEFAN ALEXANDER (GB)
Applicant: DUBOIS LTD (GB); DUBOIS PLC (GB)
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Abstract of **GB2312665**

A holder for a compact disk comprises a base portion (2) having two arms (1) resiliently cantilevered therefrom and extending radially inwards towards each other, the inner end of each arm having a projection (4A) and a contact portion (4). The projections (4A) are arranged to securely retain a compact disk by engaging on an outwardly facing surface thereof and the contact portions (4) of the arms (1) together form a button-like member (4) suitable for engagement by a finger tip. Depression of the button-like member (4) depresses the arms (1) so the projections (4A) move towards each other until their engagement with the outwardly facing surface of the compact disk is released. The contact portions (4) are arranged so that if a force is applied to the disk in the plane of the disk and perpendicular to the length of the arms (1), the majority of the force is transmitted by the disk to only one of the contact portions (4) so the possibility of the force acting on the button-like member (4) so as to release the disk is reduced.

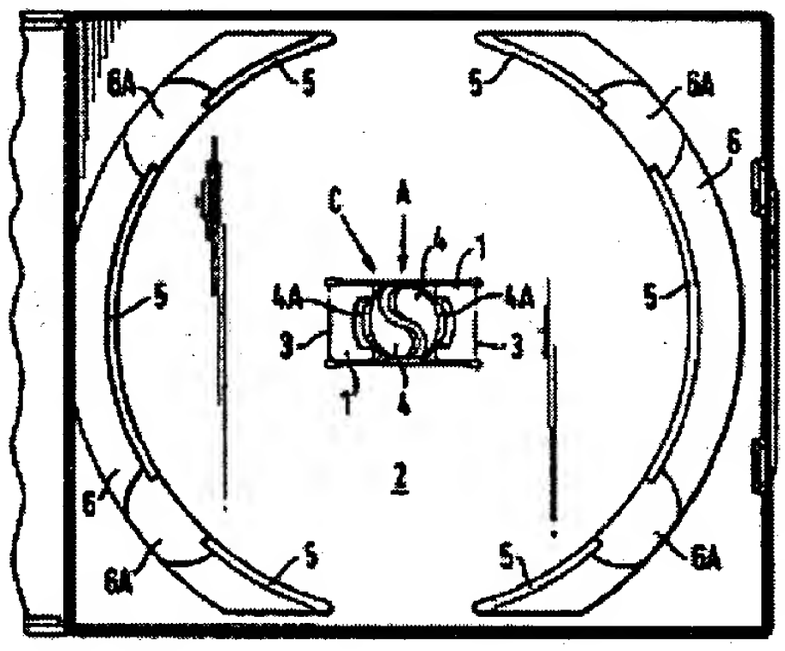

Fig.2

Holder for a compact disk

Description of **GB2312665**

APPARATUS FOR HOLDING A COMPACT DISK
This invention relates to apparatus for holding a compact disk.

By "compact disk", in the context of this specification, is meant not only the relatively common standard 120mm diameter laser-readable disk such as are currently Bold carrying, for example, pre-recorded music, computer software and data, and similar recordable disks, but also similar disks of various sizes such as are known or proposed for recording video, films, interactive games and other information or data.

Conventionally, when not in use, such compact disks are stored in clear polystyrene boxes, known as "jewel cases", wherein the disk is held on a separate insert or tray fitted in the case and having seven or eight tines arranged to form a boss or "rosette" with which the aperture in the centre of a compact disk may be releasably engaged.

The legs or tines of the rosette are shaped such that they extend upwardly from the tray, curve outwardly, such that they can grip a compact disk, and then, towards their ends, curve inwardly to provide a boss over which the hole in the compact disk may be manually pushed.

It has long been recognised that such apparatus for holding a compact disk is not very satisfactory as it requires two hands to release a disk and lift it from the rosette; consequently many people do not attempt to push the centre of the rosette but instead use just one hand to grasp an outer edge of a compact disk and wrench it off the rosette thereby bending the disk, sometimes scoring the recorded surface of the disk on the tines, and eventually distorting or even breaking the tines. Such apparatus also does not retain the disk securely in that the disk can be released by lifting an edge thereof and may also be released due to shock loads, e.g. during transport, rough handling or if the apparatus is dropped or is subjected to an impact.

GB-A-2291640 discloses apparatus which overcomes many of the disadvantages of the prior art and the disclosure of GB-A-2291640 is hereby incorporated in the present specification.

It has, however, been found that the apparatus disclosed in
GB-A-2291640 still suffers from a number of disadvantages and that its construction can be further simplified. One such disadvantage is the accidental release of a disk held thereby due to shock loads as will be described further below with reference to Figure 1.

The present invention thus aims to improve further upon the apparatus disclosed inGB-A-2291640.

According to a first aspect of the present invention there is provided apparatus for holding a compact disk having a central hole, the apparatus comprising a base portion and two arms resiliently cantilevered from the base portion extending radially inwards towards each other and away from the base portion, the inner end of each arm being provided with a projection and a contact portion, the projections being arranged to securely retain a compact disk on the apparatus by engaging on an outwardly facing surface thereof and the contact portions of the respective arms together forming a button-like member suitable for engagement by a finger tip, the arrangement being such that depression of the button-like member towards the base member causes the projections to move towards each other until their engagement with the outwardly facing surface of the compact disk is released, the contact portions being arranged such that should a force be applied to a disk held by the apparatus substantially in the plane of the disk and substantially perpendicular to the arms, at least the majority of said force is transmitted by the disk to only one of the contact portions so the possibility of such a force acting on the button-like member so as to release the disk is reduced.

Acording to another aspect of the invention, there is provided apparatus for holding a compact disk having a central hole, the apparatus being formed from an amorphous plastics material and comprising a base portion and two arms resiliently cantilevered from the base portion extending radially inwards towards each other and away from the base portion, the inner end of each arm being provided with a projection for

securely retaining a compact disk on the apparatus by engaging on an outwardly facing surface thereof and a contact portion, the respective contact portions being separate from each other but together forming a button-like member suitable for engagement by a finger tip, the arrangement being such that depression of the button-like member towards the base member causes said projections to move towards each other until their engagement with the outwardly facing surface of the compact disk is released.

The invention will now be further described, merely by way of example, with reference to the accompanying drawings, in which:
Figure 1 is a schematic view of prior art such as disclosed inCB-A-2291640 to illustrate a problem with such prior art;
Figure 2 is a plan view of oneembdiment of apparatus according to the present invention;
Figure 3 is a side view of the apparatus shown in Figure 2 with a disk shown held thereon;
Figure 4 is a more detailed side view of part of the apparatus shown in Figure 3 (without the disk); and
Figures 5(A) to 5(D) are schematic plan views showing other shape button-members which may be used in apparatus such as that shown in
Figures 2 to 4.

Figure 1 shows a plan view of two disk engaging arms 1 of prior art such as that disclosed in GB-A-2291640, cantilevered from a base portion 2 and connected thereto at hinge lines 3. The inner end of each arm is provided with a semi-circular contact portion 4 which together form a substantially circular button-like member over which the central aperture of a disk (not shown) is fitted. Each contact portion 4 carries a lip or projection 4A for securely retaining a disk by engaging on an outwardly facing surface thereof. The disk is released by depressing the button-like member towards the base portion which causes the contact portions 4 and hence the projections 4A to move towards each other until the engagement of the projections 4A on the disk is released.

A problem with this apparatus is that if a force is applied in the plane of the disk in the direction A, i.e. perpendicular to the arms 1, this force causes the disk to engage both contact portions and apply forces to them as illustrated by the arrows B. Such forces tend to push both contact portions 4 inwardly, i.e. towards each other, and downwardly (towards the base portion 2) with the result that the disk can be released. In the eample shown in Figure 1 the gap between the contact portions is relatively small but in real life the gap may be much wider so making this problem worse. This is a significant disadvantage as forces can be applied in the direction A due to mishandling of the disk or shock loads, e.g. if the apparatus is dropped or receives a blow on the side.

It should be noted that references in this specification to forces applied to a disk include not only forces applied directly to the disk but also inertial forces which cause the disk to move in a similar way,e.g. when the apparatus is subjected to an impact.

It has been discovered that the possibility of the disk being released in this way can be reduced by arranging the contact portions 4 so that at least the majority of any force applied in the direction A istransmitted by the disk k to only one of the contact portions 4.

This can be achieved by arranging the contact portions 4 so that the ends of the gap between them lie away from the perpendicular to the arms 1. Figures 2 and 5 show various possible shapes of the contact portion 4 which achieve this.

There are a number of reasons why such an arrangement of the contact portions helps reduce the risk of the disk being released by forces applied within the plane of the disk and, in particular, in a direction perpendicular to the arms 1. Firstly, as the force(or at least a majority of the force) A acts on only one of the contact portions, the tendency for the contact portions to be squeezed together is avoided or reduced. Also, as the gap between the contact portions 4 does not lie on this perpendicular, the contact portions can be formed to be a very close fit within the disk aperture in this direction so as to reduce the scope for lateral movement of the disk in this direction to a minimum.

Furthermore, if a force is applied in direction C shown in Figure SA, i.e. at the end of the gap between the contact portions 4, the tendency for such a force to cause the disk to release compared with a force indirection A acting on the arrangement shown in Figure 1 is much reduced. Again, there are a number of reasons for this. As the gap between the contact portions is no longer perpendicular to the arms 1, the width of the gap can be reduced as the inward movement of the contact portions 4 when the button-like member is depressed will be in a direction at an angle across the gap. The consequent reduction in the

width of the end of the gap where the force C may be applied reduces the pinching effect of such a force as well as reducing the scope for movement of the disk perpendicular to the gap.

Furthermore, a force in direction C will have a much reduced tendency to deflect the arm 1 as it is no longer perpendicular to the arm 1. A force in direction C is resisted by the arm 1 as one component of the force is trying to stretch the arm. Furthermore, a force in direction
C also acts to hold the disk more tightly under the projection 4A on that side of the button-like member and so the disk is retained more securely rather than having a tendency to be released.

It will be appreciated that the projections 4A are only provided on the side of the contact portion 4 in line with the arms 1 so they move inwardly when the button-like member is depressed and to release the disk. For this reason, the prior art arrangement shown in Figure 1 is particularly vulnerable to a force applied in the direction A as Such a force has no component which acts to hold the disk under either of the projections 4A.

As mentioned above, the contact portions 4A can have a variety of shapes to achieve the above advantages. The gap between the contact portions may be a simple straight line at, for example, approximately 45-70 degrees to the arms 1 as shown in Figure 5A. Alternatively, the dividing line between the contact portions 4 may have a curved or sinusoidal shape. Figures 2 and5B show examples of the latter where the contact portions 4 have a shape resembling the "yin-yang" symbol.

The ends of these dividing lines still lie away from the perpendicular to the arms 1 and are preferably positioned as close as possible to the arms 1.

Figure5C shows a further arrangement in which the dividing line is substantially V or U-shaped and Figure5D shows a further variant of this in which the dividing line follows a more curved form.

The width of the gap between the contact portions is preferably1.5mm or less and most preferably1.0mum or less.

A further advantage of the arrangements described above is that the contact portions can be arranged to increase the likelihood that both portions are contacted when the button-like member is engaged by a finger tip (and so give more reliable operation of the disk release mechanism). If the diagonal dividing line shown in Figure SA is arranged in the orientation shown so that it extends from the top left to the bottom right when a case incorporating the apparatus is open in the orientation shown in Figure 2, a right-handed person tends to extend their right index finger in a similar direction to this diagonal line so their finger tip will usually bridge the dividing line.

The other shape contact portions 4 shown in Figures 2 and SB-D are also designed so that, with a typical adult finger, it is difficult to press the button-like member without engaging both contact portions.

A yet further advantage of the arrangements described above, is that the dividing line between the contact portions, particularly in the central region of the button-like member, is no longer perpendicular to the arms 1 so any tendency for a finger pressing the button-like member to be pinched by the gap as the contact portions 4 move towards each other is reduced. It will be appreciated that In the arrangements shown in Figures SC and SD, the dividing line does not pass across the central region of the button-like member so the possibility of the finger being pinched in this way is further reduced.

In addition to the above features, it is important to accurately form the button-like member so that it is a close fit within the central aperture of the disk (which has a 15mm diameter in the conventional 120mm diamter disk) in order to minimise the scope for movement of the disk within the plane of the disk whilst it is held on the apparatus. To this end, in the direction parallel to the arms 1, the diameter of the button-like member immediately beneath the projection 4A in the unstressed state is preferably slightly greater than the diameter of the disk's aperture, e.g. between 15 and16mm, so that when the disk is held by the apparatus a slight pressure is exerted on the aperture of the disk by the apparatus. This pressure Is not sufficient to prevent the disk from being free to rotate on the buttonlike member but ensures that any lateral movement of the disk,i . e.

within the plane of the disk, on the button is prevented orminimized.

In the direction perpendicular to thearms 1, the contact portions 4 are sized to be as close a fit as possible

within the aperture of the disk so as tominimize the scope for movement of the disk in this direction.

The projections 4A preferably project from the sides of the contact portions and preferably project therefrom by between 0.5 and1.Omm.

Each projection also preferably extends around an arc on the edge of the respective contact portion so as to subtend an angle ofbetween 40 and 90 degrees at the centre of apparatus.

The apparatus described herein has a number of other important differences over the apparatus described in GB-A-2291640.

GB-A-2291640 describes the use of resilient ejection means for urging the disk out of engagement with the disk engaging means when the rims or lips release their engagement on the disk, for example, further arms resiliently cantilevered from the base portion or one or more pieces of compressible material.

Instead of or in addition to such resilient means, it has been discovered that the resilience of other parts of the apparatus,e . g.

the arms 1 or the base portion 2, and, in particular, the resilience of the disk itself can be used to provide a similar ejection function. The apparatus is thus arranged so that as the button-like member is depressed to release the disk, part of the apparatus and/or the disk is flexed so that elastic energy is stored therein and, when the engagement of the projections 4A is released, the said part and/or disk reverts to its unstressed state and causes at least the central portion of the disk to move so the projections 4A pass through the central aperture of the disk.

One simple way of achieving this is to provide supports 5 adjacent the periphery of the disk so that when the button-like member is depressed, the disk is moved towards. the base portion 2 until its periphery engages the supports 5. Further depression of the buttonlike member to release the disk thus presses the centre of the disk towards the base portion 2 relative to the periphery of the disk whereby the disk undergoes elastic deformation. Once the projections 4A have moved inwardly sufficient to release their engagement on the outwardly facing surface of the disk, the disk is free to revert to its unstressed, flat shape whereupon the central portion of the disk moves, or "pops up", so it is not re-engaged by the projections 4A or button-like member when the user's finger is removed.

In the embodiment shown in Figure 2, support 5 is provided at the periphery of the disk by a step formed on the base portion 2.

The arrangement is preferably such that when a disk is held in the apparatus, the arms 2 support the disk clear of the support 5. The disk is thus held in an unstressed state and may be free to rotate on the button-like member.

The supports 5 also limit the extent by which the peripheralportion of the disk can be pressed towards the base portion. A further problem of the apparatus described in GB-A-2291640 is that by pressing the edge of the disk towards the base portion it is sometimespossible to prise the disk off the apparatus even though the button-like member has not been fully depressed. Accordingly, by limiting the scope for movement of the periphery of the disk towards the base portion, preferably in combination with an upstand (described further below) which limits the scope for lateral movement of the disk, thisproblem can be overcome or at leastminimised.

GB-A-2291640 describes apparatus in which the contact portions 4 are mechanically interconnected, e.g. by a "living hinge" or a further button-like member. Although this can be advantageous in some circumstances, it is not always possible or desirable. A living hinge can be formed between the contact portions if the apparatus is made of a crystalline plastics material such as polypropylene and, indeed, this material is used to form apparatus as described herein when the apparatus is formed as an integral part. of an enclosure for housing the disk and such apparatus may, if desired, be provided with a mechanical interconnection between the contact portions,e.g. in the form of a living hinge.

However, it is also desirable to form the apparatus described herein as an insert or "tray" for inserting within a separate casing. The conventional "jewel box" mentioned above comprises a clear plastics casing with the disk-holding rosette formed on a tray inserted therein.

The apparatus described herein may also be formed on a similar type of tray for inserting in a conventional clear plasticscasing. Such inserts or trays are preferably made of an amorphous plasticsmaterial, such as styrene, as this has the required rigidity to hold its shape when formed into a relatively flat, tray-like article and is capable of being formed into more precise and intricate shapes. However, it is not usually possible to form a living hinge in such a rigid material.

Accordingly, the apparatus described herein (although shown in Figures 2 and 3 as being formed integrally within an enclosure) may also be provided in the form of an insert or tray formed from an amorphous plastics material with the respective contact portions 4 separate from each other but together forming a button-like member suitable for engagement by a finger tip.

As the contact portions 4 in such an arrangement are not interconnected, any tendency for one portion to pull the other one down if one portion is subjected to a lateral force such as A or C described above, is avoided.

In such an arrangement, the contact portions 4 are also preferably shaped so as to increase the likelihood that both portions are contacted when the button-like member is depressed by a finger tip (as described above) to help ensure the release mechanism operates easily and reliably.

When appropriate, the apparatus described above is preferably provided with an upstand 6 surrounding or partially surrounding a disk held in the apparatus so as to restrict access to the peripheral edge of the disk. The upstand 6 thus forms a "nest" in which the disk is held. The upstand 6 thus acts to obstruct access to much of the edge of the disk (except at finger cut-outsSA which are provided to assist in lifting a disk out of the apparatus when it has been released) in order to further reduce the risk of forces being applied to the disk within the plane thereof. The upstand 6 is preferably positioned close to the periphery of the disk (e.g. with a clearance ofo . Smm or less) so as to provide further restriction on the scope for movement of the disk within its own plane. The support 5 described above may be formed as a step in the side of the upstand 6.

As shown in Figure 2, there is a gap in the upstand 6 at either side of the apparatus, each gap extending through about 40 degrees around the periphery of the disk. These gaps are provided to reduce the width of the apparatus. This is, for example, required so the apparatus made in the form of an insert or tray can be fitted into an enclosure of conventional size. The disk is clearly more vulnerable to lateral forces in the area of these gaps. However, it will be appreciated that by shaping the contact portions 4 so that the ends of the gap between the contact portions fall on a line which does not coincide with the gaps in the upstand 6, this potential problem can be avoided.

The apparatus described herein thus enables a disk to be securely held by simply placing the disk on the apparatus so that its aperture lies over the button-like member. The disk is then pressed towards the base portion 2 whereupon the button-like member is depressed causing the contact portions 4 and the projections 4A to move towards each other until the button-like member is able to pass through the aperture. Once the projections 4A have passed through the aperture, the arms 1 revert to or towards their unstressed position so that the projections 4A engage upon the outwardly facing surface of the disk and thus securely retain the disk on the apparatus.

The apparatus is designed so that the disk can beeasily released by depressing the button-like member but is otherwise very difficult to remove other than by forcing it to the extent that the apparatus and/or the disk is damaged.

' ilst held by the apparatus, the disk is supported away from the base portion 2 by the arms 1 and/or the button-like member. As the arms flex principally about the hinge lines 3 which are at a greater radius from the centre of the apparatus than the projections 4A, any attempt to prise or wrench the disk off the apparatus will cause the arms I to flex further from the base portion about the hinge lines 3 and thus tighten their engagement with the disk.

The arms 1 themselves are preferably relatively stiff so movement thereof occurs principally by means of flexing about the hinge lines 3 rather than flexing of the arm itself or of the contact portions 4 relative to the arm 1.

As indicated above, the disk is released by simply depressing the button-like member whereby the arms 1 flex towards the base portion 2. The disk itself must also be allowed to move towards the base portion 2

with the arms until the projections 4A have moved inwards sufficiently to release their engagement on the outwardly facing surface of the disk.

The apparatus described herein thus provides significant improvements over prior art such as the conventional "rosette" type of boss and also provides further improvements over the apparatus described inGB-A-2291640.

Holder for a compact disk

Claims of **GB2312665**

CLAIMS

1. Apparatus for holding a compact disk having a centralhole, the apparatus comprising a base portion and two armsreiliently cantilevered from the base portion extending radially inwards towards each other and away from the base portion, the inner end of each arm being provided with a projection and a contact portion, the projections being arranged to securely retain a compact disk on the apparatus by engaging on an outwardly facing surface thereof and the contact portions of the respective arms together forming a button-like member suitable for engagement by a finger tip, the arrangement being such that depression of the button-like member towards the base member causes the projections to move towards each other until their engagement with the outwardly facing surface of the compact disk is released, the contact portions being arranged such that should a force be applied to a disk held by the apparatus substantially in the plane of the disk and substantially perpendicular to the arms, at least the majoritycf said force is transmitted by the disk to only one of the contact portions so the possibility of such a force acting on the button-like member so as to release the disk is reduced.

2. Apparatus as claimed in Claim 1 in which the respective contact portions are separated by a gap, the ends of the gap lying away from a line which is perpendicular to the arms.

3. Apparatus as claimed in Claim 2 in which a line joining the opposite ends of said gap lies at an angle of 45 to 70 degrees to the arms.

4. Apparatus as claimed in Claim 2 or 3 in which said gap forms a substantiallystraight dividing line between the contact portions.

5. Apparatus as claimed in Claim 2 or 3 in which said gap forms a curved dividing line between the contact portions.

6. Apparatus as claimed in Claim 2 or 3 in which said gap forms a substantially S-shaped dividing line between the contact portions.

7. Apparatus as claimed in Claim 2 or 3 in which said gap forms a substantially V-shaped or U-shaped dividing line between the contact portions.

8. Apparatus as claimed in any preceding claim in which the respective contact portions are separated by a gap, the width of the gap being1.5mm or less and preferably1. Omm or less.

9. Apparatus as claimed in any of claims 2 to 3 in which said gap does not pass through the central region of the button-like member.

10. Apparatus as claimed in any of Claims 2 to 8 in which the portion of said gap passing through the central region of the button-like

member is not perpendicular to the arms.

11. Apparatus as claimed in any preceding claim with an upstand positioned so as to surround or partially surround the periphery of a disk held on the apparatus.

12. Apparatus as claimed in Claim 11 in which the upstand is positioned so as to leave a clearance between itself and the periphery of a disk held on the apparatus of0.5mm or less.

13. Apparatus as claimed in Claims 3 and 11 or 1Z in which the said line joining the opposite ends of said gap does not coincide with any gap in the upstand.

14. Apparatus as claimed in any preceding claim in which the projections project from the respective contact portions.

15. Apparatus as claimed in Claim 14 in which the projections project from the respective contact portions by between 0.5 and1. omen.

16. Apparatus as claimed in Claim 14 or 15 in which the projections each extend around an arc which subtends an angle of between 40 and 90 degrees with the centre of the apparatus.

17. Apparatus as claimed in any preceding claim arranged such that when the button-like member is depressed and a disk is held on the apparatus, part of the apparatus and/or the disk is flexed so that elastic energy is stored therein such that when the engagement of the projections on the outer surface of thedisk is released1 said part and/or the disk reverts to its unstressed state so as to cause at least the central portion of the disk to move so the projections pass through the aperture of the disk.

18. Apparatus as claimed in Claim 17 provided with supports for supportlng the periphery of the disk when the button-like member is depressed such that depression of the button-like member distorts the centre of the disk relative to the periphery of the disk.

19. Apparatus as claimed in Claim 18 in which the supports comprise one or more steps formed on the base portion.

20. Apparatus as claimed in Claim 11 and Claim 18 or 19 in which the supports comprise a step formed on the side of the upstand.

21. Apparatus as claimed in any preceding claim arranged such that a disk held thereon is supported clear of the base portion and is free to rotate about the button-like member.

22. Apparatus as claimed in any preceding claim moulded from a crystalline plastics material.

23. Apparatus as claimed in Claim 22 in which the contact portions are mechanically interconnected.

24. Apparatus as claimed in Claim 22 or 23 which is integrally moulded as part of an enclosure for a disk.

25. Apparatus as claimed in any of Claims 1 to 21 moulded from an amorphous plastics material.

26. Apparatus as claimed in Claim 25 in which the contact portions are separate from each other.

27. Apparatus for holding a compact disk having a central hole, the apparatus being formed from an amorphous plastics material and comprising a base portion and two arms resiliently cantilevered from the base portion extending radially inwards towards each other and away from the base portion, the inner end of each arm being provided with a projection for securely retaining a compact disk on the apparatus by engaging on an outwardlyfacing surface thereof and a contact portion, the respective contact portions being separate from each other but together forming a button-like member suitable for engagement by a finger tip, the arrangement being such that depression of the button-like member towards the base member causes said projections to move towards each other until their engagement with the outwardly facing surface of the compact disk is released.

28. Apparatus as claimed in Claim 25, 26 or 27 in which the apparatus is in the form of an insert or tray for inserting into an enclosure.

29. Apparatus for holding a compact disk substantially as hereinbefore described with reference to Figures 2 to 5 of the accompanying drawings.
EMI17.1

<tb>

Amendments <SEP> to <SEP> the <SEP> claims <SEP> have <SEP> been <SEP> filed <SEP> as <SEP> follows
<tb> 1. Apparatus for holding a compact disk having a central hole, the apparatus comprising a base portion and two arms resiliently cantilevered from the base portion extending radially inwards towards each other, the inner end of each arm being provided with a projection and a contact portion, the projections being arranged to securely retain a compact disk on the apparatus by engaging on an outwardly facing surface thereof and the contact portions of the respective arms together forming a button-like member suitable for engagement by a finger tip, the arrangement being such that depression of the button-like member depresses the arms so as to move the projections towards each other until their engagement with the outwardly facing surface of the compact disk is released, the contact portions being arranged such that should a force be applied to a disk held by the apparatus substantially in the plane of the disk and substantially perpendicular to the length of the arms, at least the majority of said force is transmitted by the disk to only one of the contact portions so the possibility of such a force acting on the button-like member so as to release the disk is reduced.

2. Apparatus as claimed in Claim 1 in which the respective contactportions are separated by a gap, the ends of the gap lying away from a line which is perpendicular to the length of the arms.

3. Apparatus as claimed in Claim 2 in which a line joining the opposite ends of said gap lies at an angle of 45 to 70 degrees to the arms.

4. Apparatus as claimed in Claim 2 or 3 in which said gap forms a substantially straight dividing line between the contact portions.

5. Apparatus as claimed in Claim 2 or 3 in which said gap forms a curved

dividing line between the contact portions.

6. Apparatus as claimed in Claim 2 or 3 in which said gap forms a substantially S-shaped dividing line between the contact portions.

7. Apparatus as claimed in Claim 2 or 3 in which said gap forms a substantially V-shaped or U-shaped dividing line between the contact portions.

8. Apparatus as claimed in any preceding claim in which the respective contact portions are separated by a gap, the width of the gap being 1.5mm or less and preferably1.0mum or less.

9. Apparatus as claimed in any of claims 2 to 3 in which said gap does not pass through the central region of the button-like member.

10. Apparatus as claimed in any of Claims 2 to 8 in which the portion of said gap passing through the central region of the button-like member is not perpendicular to the arms.

11. Apparatus as claimed in any preceding claim with an upstand positioned so as to surround or partially surround the periphery of a disk held on the apparatus.

12. Apparatus as claimed in Claim 11 in which the upstand is positioned so as to leave a clearance between itself and the periphery of a disk held on the apparatus of0.5mm or less.

13. Apparatus as claimed in Claims 3 and 11 or 12 in which the said line joining the opposite ends of said gap does not coincide with any gap in the upstand.

14. Apparatus as claimed in any preceding claim in which the projections project from the respective contact portions.

15. Apparatus as claimed in Claim 14 in which the projections project from the respective contact portions by between 0.5 and1.0mum.

16. Apparatus as claimed in Claim 14 or 15 in which the projections each extend around an arc which subtends an angle of between 40 and 90 degrees with the centre of the apparatus.

17. Apparatus as claimed in any preceding claim arranged such that when the button-like member is depressed and a disk is held on the apparatus, part of the apparatus and/or the disk is flexed so that elastic energy is stored therein such that when the engagement of the projections on the outer surface of the disk is released. said part and/or the disk reverts to its unstressed state so as to cause at least the central portion of the disk to move so the projections pass through the aperture of the disk.

18. Apparatus as claimed in Claim 17 provided with supports for supporting the periphery of the disk when the button-like member is depressed such that depression of the button-like member distorts the centre of the disk relative to the periphery of the disk.

19. Apparatus as claimed in Claim 18 in which the supports comprise one or more steps formed on the base portion.

20. Apparatus as claimed in Claim 11 and Claim 18 or 19 in which the supports comprise a step formed on the side of the upstand.

21. Apparatus as claimed in any preceding claim arranged such that a disk held thereon is supported clear of the base portion and is free to rotate about the button-like member.

22. Apparatus as claimed in any preceding claim moulded from a crystalline plastics material.

23. Apparatus as claimed in Claim 22 in which the contact portions are mechanically interconnected.

24. Apparatus as claimed in Claim 22 or 23 which is integrally moulded as part of an enclosure for a disk.

25. Apparatus as claimed in any of Claims 1 to 21 moulded from an amorphous plastics material.

26. Apparatus as claimed in Claim 25 in which the contact portions are not connected to each other.

27. Apparatus as claimed in Claim 25 or 26 in which the apparatus is in the form of an insert or tray for inserting into an enclosure.

28. Apparatus for holding a compact disk substantially as hereinbefore described with reference to Figures 2 to 5 of the accompanying drawings.
